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AN effort is being made to collect \$5,000 to improve the library at Wesleyan University. Mr. J. E. Andrus has pledged \$1,000 on condition the rest be raised.

THE Society of the New York Hospital has sold to Barnard College, for \$160,000, a site on the west side of the Boulevard, between 119th and 120th Streets.

THE *Naturwissenschaftliche Rudschau* states that Professor v. Kries has declined the call to the chair of physiology in the University of Leipzig.

AT Zurich Dr. Hans Schinz has been promoted to a full professorship of botany, and Dr. A. Werner to a full professorship of chemistry.

PROFESSOR TRENDELENBURG has been called to take Professor Thiersch's place in Leipzig. Professor Mikulicz takes Professor Trendelenburg's place in Bonn.—*N. Y. Medical Record*.

THE Senate of the University of Cambridge has resolved, by a majority of 18 votes, to make an English essay a part of the 'Little go,' or preliminary examination.

THE statute on research degrees at Oxford, which we have already mentioned as of special interest to Americans proposing to study abroad, has passed its final stage in convocation without opposition.

DR. HENRY CALDERWOOD, professor of moral philosophy in the University of Edinburgh, has requested to be retired from the chair in view of his candidature for Parliament.

AT Oxford, on June 17th, the proposal for establishing a Final Honour Examination in Anthropology in the School of Natural Science was discussed in Convocation, and the statute was rejected by 68 votes to 60. According to *Nature* the rejection was due to 'theological suspicions' and 'those classical teachers that believe that science may safely be ignored in a nineteenth century education.'

THE seventh summer meeting of university extension and other students will be held this year at Oxford, and will be divided into two parts, the first lasting from August 1st to August 12th, and the second from August 12th to August 26th. Included in the varied course there will be lectures on natural science during both parts of the meeting, and classes will be formed for practical work in the different divisions. Among those who have promised to lecture are Professors Green and Odling; Drs. Fison and Wade; Messrs. Carus, Wilson, Marsh, Groom and Bourne.

CORRESPONDENCE.

A BIBLIOGRAPHY OF SCIENTIFIC LITERATURE.

TO THE EDITOR OF SCIENCE: With your permission, I will make a few observations on a plan which I have been steadily working out for the last 35 years, more especially as it embodies many of the suggestions which have recently been made by some of your correspondents. It embraces:

1. A *Bibliography* classified according to subjects arranged: (1) according to the year of publication, and (2) alphabetically under each year according to the name of the author; each item has its distinctive number for reference purposes.

2. An *Index*, which, although arranged alphabetically, is classified in groups more than is usual in an index, the object being to render it possible, at some future time, to amalgamate the various subject indexes into one general classified index.

3. A *Systematised Collocation of Facts* grouped according to their relationship to each other. The aim of the whole is to enable any person engaged in scientific research to find the information he seeks with a minimum expenditure of trouble, time and cash.

In its entirety the idea is thoroughly Utopian; nevertheless, I feel very confident that if only partially carried out it would

afford considerable assistance to many workers.

The method pursued has been to take up literary items in succession, be it a paper, a volume or a series of volumes (for a plentiful supply of which I am indebted to many of your countrymen), to thoroughly analyze the contents and to place the data under their appropriate headings, care being taken to eliminate all useless repetition. As the subject-matter is divided up into a very large number of headings, the result is the focalization of the data in a systematic sequence, so as to bring into close contiguity the facts bearing on the headings which were originally widely scattered in scientific literature.

The generical idea is simple enough, but the practical realisation of it is sometimes attended by many difficulties, and involves a great multiplicity of details which can not be described in the limits of a letter; but some notion may be formed of the scope and extent of what has been done, if a summary is given of the matter already collected under the heading 'Animalia: General.'

The *Bibliography* arranged chronologically by years and alphabetically by authors' names subordinate to the year, at present numbers between 30,000 and 40,000 titles on about 5,000 slips. *General*; for notes of the most general kind, or of an indefinite character; this covers about 50 slips. *Descriptive*; about 30 slips. *Classification*; about 100 slips, arranged chronologically by years, a remark which applies to all headings. *Affinities*; about 70 slips. *Characters*; about 200 slips; arranged by groups (Class, order, etc.) *Organic grade*; about 3,600 slips. This is an attempt to arrange all groups according to their apparent grade on an organic scale, in which the lowest animal is considered to be 1, and the highest 1,000,000. I believe there is a certain amount of novelty in the idea of numeri-

cally externating organic grade, and therefore I venture to make an extract from the slip which refers to the grade range 55,001-56,000. This is considered to be the highest limit of the sub-kingdom *Protozoa*. The class *Infusoria* and the order *Ciliati* extend through it and terminate with it. The following families are comprised in it:

Oxytrichina, 55,001-55,100.

Urocentrina, 55,101-55,550.

Vorticellina, 55,551-56,000.

The following genera are comprised in it:

Stylochæta, 55,001-55,033.

Oxytricha, 55,034-55,100.

Urocentron, 55,200-55,300.

Trichodinopsis, 55,551-55,584.

Spirochona, 55,585-55,618.

Trichodina, 55,619-55,642.

Lagenophrys, 55,643-55,676.

Vaginicola, 55,677-55,710.

Cothurnia, 55,711-55,744.

Ophrydium, 55,745-55,789.

Gerda, 55,790-55,824.

Scyphidia, 55,825-55,859.

Epistylis, 55,860-55-894.

Zoothamnium, 55,895-55,929.

Carchesium, 55,930-55,964.

Verticella, 55,965-56,000.

It is not supposed for one moment that these figures have any claim to strict scientific accuracy. In this respect they are co-equal in value with the classification on which they are based; their special advantage is that they enable a person to give definiteness to his views as to the position of any form, and hence afford a ready means of comparing any number of different views. For instance, if Rolleston's classification were adopted, the apparent place of *Verticella* would be at about 142,800. This not only shows a difference of opinion, but also the extent of it; this definiteness is calculated to be of great advantage in carrying on discussion.

Systemic: general; about 500 slips.

Systemic : general : Chemical substances ; about 3,000 slips.

There is, I think, a certain amount of novelty in the mode of grouping under this heading, but it would occupy too much space to draw any further attention to this feature. Under this heading each substance found in the bodies of animals has its own set of slips. Particulars are entered bearing upon its chemical composition, chemical constitution, the processes of formation (actual and hypothetical), the changes which it undergoes in the animal body, and (in a general way) its modes of occurrence in the different systems of organs. The full details are given in connection with each organic system.

Under *Systemic: General*; there are also grouped, the notes relating to *Development, Cells* and their differentiated parts, each part having its own set of slips. *Chondroites, Cilia, Animal Magnetism, Animal Electricity*, and a few other minor subheadings; these cover about 100 slips. *Absorbent System*; this covers about 250 slips, and is broken up into various subheadings subordinate to *Lacteal and Lymphatic Subsystems. Alimentary System*; about 1,500 slips. Each particular part has its own set of slips. Under *Bile* each chemical substance found therein has a special set of slips devoted to it; at present there are 65 such substances dealt with in the notes. Under *Food*, also there are a number of subordinate headings: *Circulatory System*, about 1,200 slips. *Generative System*; about 200 slips. *Glands*; about 700 slips. *Muscular System*; about 500 slips. *Nervous System*; about 900 slips. *Osseous System*; about 800 slips. *Respiratory System*; about 300 slips. *Senses*; about 500 slips. *Tegumentary System*; about 300 slips. *Tissues*; about 500 slips. *Urinary System*; about 600 slips. *Habits*; about 150 slips. *Medial Influence*; about 3,200 slips. *Geological Distribution*; about 2,500 slips. This is arranged by periods, and under each period there

are separate sets of slips for each country or subdivision of a country, such as county, etc. *Geographical Distribution*; about 400 slips.

The whole number of slips relating to animals regarded from a general point of view is about 27,000.

Each class of animals has separate treatment, the facts being mostly grouped together under the main headings above enumerated for animals in general, subordinated to the name of each genus.

Notes have been collected more or less fully under most of the classes, so that few comprise less than 5,000 or 6,000 slips, while some comprise a great many more than that.

The notes under some of the non-zoölogical subjects are also more or less bulky. Thus *Stratigraphy, Minerals* (including chemical substances), *Ocean, Water* and some others each exceed 30,000 slips.

The slips I use measure eight inches by five inches, and are arranged in book boxes lettered on the back with the name of the subject-matter in the box. Each slip is headed with all the main and subordinate headings appertaining to it and numbered. By taking care that the size is kept uniform there is little risk of the edges being turned back, of the corners being dog-eared, or of the surfaces becoming dusty or soiled. They have all the advantages of cards, occupy much less space and are more easily handled, as each book box is the size of a thick octavo volume.

In conclusion, I wish to thank you for allowing me to occupy so much of your space.

A. RAMSAY.

LONDON.

HACK TUKE MEMORIAL.

THE great respect in which the late Dr. D. Hack Tuke was held by all who knew him has led to a very generally expressed desire that his memory should be perpetuated in connection with the great work to which